ABSTRACT

A new method to form CMOS image sensors in the manufacture of an integrated circuit device is achieved. The method comprises providing a semiconductor substrate. Sensor diodes are formed in the semiconductor substrate each comprising a first terminal and a second terminal. Gates are formed for transistors in the CMOS image sensors. The gates comprise a conductor layer overlying the semiconductor substrate with an insulating layer therebetween. The transistors include reset transistors. Ions are implanted into the semiconductor substrate to form source/drain regions for the transistors. The source regions of the reset transistors are formed in the first terminals of the sensor diodes. Ions are implanted into the reset transistor sources to form double diffused sources. The implanting is blocked from other source/drain regions.